

EMCal descoping scenarios

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lower cost EMCaI

- like to consider impact and possible buyback of EMCaI scenarios which lower the cost as discussed in
 - 4th fortnightly meeting
 - <https://indico.bnl.gov/conferenceDisplay.py?confId=2019>
 - yesterday's EC meeting
 - <https://indico.bnl.gov/conferenceDisplay.py?confId=2023>
- two scenarios shown (from Jamie), are there other creative ideas?

Consideration A

1.6 Calorimeter Electronics → \$4.9M

EmCal electronics completely dominates the cost

Almost all purchases (not engineering) that scales with channel count

One Option – can we build all the EMCal towers, and gang the readout
2x2 → saves \$3M

Minimal impact on jet and direct photon physics (direct photons > 15 GeV where they dominate is already beyond 2γ separation anyway).

Straightforward for Jin to evaluate degraded e/p separation. Main impact is worse S/B for Upsilon physics in Au+Au.

Can one work this option and what is the critical time if one got more funds to buy the channels back.

4/24/2016

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Jamie, 4/25/16

Consideration B

1.4 EmCal Towers → \$4.2M

1.6 Calorimeter Electronics → \$4.9M

EmCal towers dominated by material costs – labor included elsewhere

One Option – can we build only half the EmCal Towers

→ Saves \$2.1M (towers) + \$2M (electronics) = \$4.1M

Could cover $|\eta| < 0.5$ and plan to build out as much as possible later.

- Direct photon physics acceptance down by factor of 2.
- Upsilon physics down by a factor of ~ 4 (easy to check w/o GEANT).
- What is jet resolution in region with only HCal (easy to check with GEANT) – boundary region is not great, but probably correctable.

Are there support issues that need to be designed in to add more full phi rings expanding out in eta later?

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Jamie, 4/25/16